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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Inventor: Allen Berger, Jr.

Serial Number: 10/822,079

Filed: April 12, 2004

Title: GARAGE DOOR  
REINFORCEMENT SYSTEM

Docket: 240061.4

Art Unit: 3634

Examiner: Blair M. Johnson

**APPEAL BRIEF FOR APPELLANT UNDER 37 CFR §1.192**

Board of Patent Appeals and Interferences  
U.S. Patent and Trademark Office  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Honorable Board Members:

This is an appeal for the Office Action finally rejecting claims 1 through 4 on September 25, 2007. The claims on appeal are included in the Appendix. A notice of appeal and extension of time fee were filed on March 25, 2008.

This Brief is submitted in triplicate in support of the Appeal in the above-identified application.

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## **1. REAL PARTY IN INTEREST**

The original applicant and inventor, Allen Berger, Jr., controls, along with other family members, DAB Door Company, Inc., which is the real party in interest by virtue of an assignment recorded in reel 015909, frame 0585.

## **2. NO RELATED APPEALS OR INTERFERENCES**

There is no related appeals or interferences.

## **3. STATUS OF CLAIMS**

The following pending claims (1 through 4) subject of this appeal were included in the Petition for Reconsideration and amendment filed on May 2, 2008, and all claims stand finally rejected. The Applicant appeals as to all claims 1-4.

## **4. STATUS OF AMENDMENTS**

A request for reconsideration and amendment after final rejection was filed on May 2, 2008, along with a declaration from Applicant. The Examiner has acted on the request and entered the amendment of claim 1 for the deletion of the words “open reinforcing members” which can be optionally used without affecting the subject matter claimed herein. See Advisory Action dated May 14, 2008.

## **5. SUMMARY OF INVENTION**

The present invention provides an internal garage door reinforcement system that is capable of withstanding high winds and flying objects of hurricane grade and is manufactured using conventional roll forming processes. The invention enhances the structural integrity of the garage door by adding reinforcement members that complement and conforms to the main structural members of the door. The invention does not adversely affect the aesthetics of the door.

In May, 2000, Applicant received U.S. patent No. 6,062,293 for a garage door reinforcement device. Applicant has been in the garage door business for many years. Facing the problem of providing sufficiently reinforced garage doors to meet the local authorities’ wind tests, Applicant has designed many devices that meet this need. However, the cost of materials, transportation,

maintenance and installation, as well as the weight of the door assembly, increases with more protection. *See Leist* reference, col. 1 verifying some of the problems faced by manufacturers in the industry. *Leist et al.* (U.S. patent No. 5,555,923).

The elements of the independent claim 1 under appeal is described as follows:

In a reinforced garage door (garage door **10**; page 5, line 4) in which said garage door has a plurality of panels (panel **20**; page 5, line 5), having a horizontal width and a vertical height, which panels (panel **20**; page 5, line 5) are monolithic for the entire length of the panels (panel **20**; page 5, line 5), with adjacent panels above such panels (panel **20**; page 5, line 5) having reversely folded edge portions with complementing joints along the top edge (upper longitudinal end **24**; page 5, line 12) and the bottom edge (lower longitudinal end **26**; page 5, line 13), such panels (panel **20**; page 5, line 5) having open end members, spaced vertically and interiorly of the door, and means for securement (angular walls **82**; **84**; and fastening members **79**; page 6, lines 2-5) at the extreme lateral edges to a track for raising and lowering the door, the improvement comprising a plurality of longitudinal unitary reinforcement members (reinforcement runner members **50**; **60**; page 6, lines 10-11) insertable horizontally and interiorly of the complementing joints (longitudinal tongue **32** and longitudinally extending groove **42**; page 5, lines 24-26) top and bottom longitudinal reversely folded edge portions (upper longitudinal end **24**; page 5, line 12) of the panel (panel **20**; page 5, line 5) from one end thereof to the other uninterrupted and having conforming longitudinal portions for said complementing joints and coming in abutting longitudinal contact with the latter.

With more weight, the need to raise the motor's capacity to move the door is quite apparent. Merely making the door panels thicker will increase the cost of the door assembly. Applicant's invention resides in the novel approach to solve this problem by selectively reinforcing the most vulnerable portions of the door assembly, namely, the joint folds, with reinforcement members as claimed in independent Jepson-type claim 1. This is accomplished by using a plurality of longitudinal unitary reinforcement members labeled in the Applicant's specification as reinforced runners 50 and 60 and best illustrated in figure 4. Runners 50 and 60 include longitudinal portions forming ends 24 and 26 that conform to complementing joints and come in abutting longitudinal contact with them. The function of reinforcement runner members 50 and 60 is to enhance the structural integrity of ends 24 and 26, respectively, by having

complementary longitudinally curved portions 67 and 67' come in longitudinal contact and conforming to the shape of longitudinally extending groove 42. Similarly, complementary longitudinally curved portions 57 and 57' come in longitudinal contact and conforming to the shape of longitudinally extending tongue 32. The result is a structure of superior strength. See also Applicant's specification page 5, line 6, lines 12-16. Runner 50 includes longitudinal curved portions 57 and 57 that conform to longitudinal tongue 32 at Applicant's specification page 6, lines 21-22.

## **6. ISSUES TO BE REVIEWED ON APPEAL**

This appeal is focused on two issues:

- Whether Claims 1 through 4 are unpatentable under 35 U.S.C. § 102(b) as being anticipated by *Leist et al.* (U.S. patent No. 5,555,923).
- Whether Claims 1 through 4 are unpatentable under 35 U.S.C. § 103(a) as being unpatentable over Berger, Jr. (U.S. patent No. 6,062,293) in view of *Leist et al.* (U.S. patent No. 5,555,923).

## **7. GROUPING OF CLAIMS**

The nature of the Examiner's error is the same for all of the claims. The claims are grouped as follows:

- 1-4 (reinforced garage door).

## **8. ARGUMENT**

### ***I. Overview of the Argument***

1. The piecemeal, non-unitary telescopic arrangement and non-continuous bars of *Leist et al.* member 32 fails to provide the structural integrity that is required to pass the pertinent high wind tests. Not having a continuous unitary reinforcement member compromises the rigidity of the garage door.
2. The location of the reinforcement in *Leist* is outside the folded ends of the panels, which are the most vulnerable portions of the doors. Members 32 in *Leist* are placed at a considerable distance away from the articulation folds referred to as male and female joint members 66 and 68 in *Leist's* patent. *Leist et al.* (Col. 6, lines 4- 6), *See also*

*Leist et al.* (figure 4). Therefore, even if the discrete “telescopic” reinforcement pieces disclosed are to be interpreted as equivalent to the unitary reinforcement member, their location makes them ineffective to protect the most vulnerable joint members 66 and 68.

3. Finally, the conforming characteristics of the Applicant invention as to the folded articulations are not even suggested by the *Leist* reference. The Examiner erroneously equates the conforming of the shape of the joints to Applicant’s conforming of the reinforcing members to the shape of the joints. See p. 2, last paragraph, of final Office action. There is no attempt to discuss the vulnerability that joint members 66 and 68 present. *Leist* was not even concerned about the problem of re-enforcement of the joints. The present invention selectively strengthens the joints by conforming the reinforcing members to the longitudinal shape of the folds or joints and using reinforcement of small longitudinal grooves is equivalent to using thicker, stronger material in selective places. These features are not present in *Leist*.

## ***II. Background***

### **Garage door development process and tools**

Several inventions for reinforcements for garage doors have been developed in the past. None of them, however, includes an additional reinforcement member conforming to the structure that extends continuously and transversally across a door panel. The present invention eliminates the U-shaped bars that are externally mounted at present while enhancing its structural integrity.

Typically, garage doors have multiple panels with multiple widths, with a panel height of 21 inches, preferably, and modular lengths of 8; 9; 12 and 16 feet (2.44; 2.74; 3.66; 4.88 meters, respectively). The most popular designs include four panels that are monolithic throughout the entire length, each having lateral top and bottom edges. These edges have a tongue and groove, shiplap, or equivalent terminations. These terminations are intended to provide structural reinforcement and also act as a barrier to the elements, including water and wind.

Garage doors are typically made with aluminum sheets or steel sheets. The typical manufacturing processes include roll-forming or extrusion which is simple, inexpensive and customary in the industry. Aluminum or wood are usually preferred because of cost and weight

but it significantly undermines strength. Steel sheets are expensive and too heavy for the average consumer garage door. Finding the right compromise between, strength to conform to hurricane codes, weigh to be handled by the average person, and by means of industry tools, was the problem solved by the Applicant's invention.

### The challenge of complying with construction codes

Construction codes in several areas, specifically those that are prone to windstorms and hurricanes, require passing certain wind tests. It is therefore the need in the industry for the reinforcement of garage doors. Typically, garage doors are not prepared to withstand strong winds experienced in many parts of the world. There was a need for reinforced garage doors, capable of passing hurricane wind tests for each jurisdiction, on a selective basis.

It is the unexpected result experienced by conforming the reinforcement members that permits the Applicant to manufacture his reinforced garage doors with a minimum of weight and cost. In the roll forming industry, the sheets of metal have a uniform pre-selected gauge. So, it would not be possible to form portions of the folds with thicker material while the rest of the panel is made with the thinner material. The present invention provides a reinforcement assembly that conforms and follows the lateral edges of a garage door panel.

Not even the Applicant suspected that this change in the configuration and cooperation of his reinforcement grooves would have such an effect. It would be reasonable to expect the Applicant herein to have incorporated this change, had it been known at the time of the invention, since there has been a substantial economic reward for implementing it. It was not until after hundreds of doors were manufactured that the inventor came across his invention.

### ***III. Rejection under 35 U.S.C. 102(b) over U.S. patent No. 5,555,923 (Leist)***

#### *i) Claim 1*

The §102(b) rejection of claims 1-4 as being anticipated by US patent 5,555,923 is in error.

The Leist et al. reference does not teach the Applicant's invention as claimed. Leist, does not help one skilled in the art recognize what to do to in order to reinforce the doors at the vulnerable joints. First, Leist does not uninterruptedly conform to the joints as claimed by the Applicant. By selectively using reinforcement members that "conform" to the shape of the joint folds, the most efficient allocation of material is achieved. The effect of the conforming longitudinal

portions of the reinforcement members that come in abutting longitudinal contact with the joints including the novel reinforcement of small longitudinal grooves is equivalent to using thicker (stronger) material in selective places (i.e. the vulnerable joints). This feature has not been taught or suggested in the cited references, taken singly or in combination. Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added).

*ii) Claim 2*

Claim 2 includes first, second, third, fourth, and fifth folded longitudinal walls. The fourth and fifth walls conform to the contour of the complementing joints. In the cited reference the patentee refers to a reduced position **38** that measures approximately 8 inches long. Col. 6, lines 56-57, Fig. 3. This is far from the reinforcement member claimed herein which requires these characteristics to make it compatible with roll forming processes and thus cost effective.

More important, however, is that there is no teaching of any conforming to enhance the structural integrity of the folded portions. The Examiner refers to “ribs” that are not identified in the patent reference.

In sum, there is no anticipation of the subject matter claimed in claim 2.

*iii) Claims 3-4*

Next, Leist does not teach the tongue and groove type elements as described and claimed in the Application. The Applicant discloses on page 5, lines 24-26, “Longitudinal tongue 32 and longitudinally extending groove 42 are intended to provide reinforcement to ends 24 and 26, respectively, and protection from the elements.” Also on page 6, lines 16-17, “Wall 64 includes small longitudinal grooves 61 to enhance its strength.” Further on page 7, lines 8-15, “longitudinally extending groove 42. ... conforming to the shape of longitudinally extending tongue 32. The result is a structure of superior strength.” The examiner failed to show that the natural result flowing from Leist’s disclosure would result in the grooves and tongue as described and claimed by the Applicant.

The present invention further includes the novel reinforcement of small longitudinal grooves 59 and 59’ and complementing longitudinal curved portions 57 and 57’ that conform to



longitudinal tongue 32. These features are compatible with the panels' terminations, namely, tongue and groove, shiplap and others.

The Examiner argues on page 2 of the final office action that "The joints may be broadly considered to be 'tongue and groove' and 'shiplap' ". Again, the examiner failed to show that the natural result flowing from Leist's disclosure of "folded" portions would result in the small uninterruptedly longitudinal with tongue and grooves to enhance its strength as described by the Applicant. Furthermore, by using folded portion in the form of ribs, Leist's disclosure does not teach each and every element of the claimed invention arranged as in the Applicant's claims. A prior art reference anticipates a claim only if the reference discloses, either expressly or inherently, every limitation of the claim. "[A]bsence from the reference of any claimed element negates anticipation." *Rowe v. Dror*, 112 F.3d 473, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997) (quoting *Kloster Speedsteel AB v. Crucible, Inc.*, 230 USPQ 81, 84 (Fed. Cir. 1986)).

***IV. Rejection under 35 U.S.C. 103(a) as being unpatentable over U.S. patent No. 6,062,293 (Berger, Jr.) in view of U.S. patent No. 5,555,923 (Leist)***

The §103(a) rejection of claims 1-4 as being as being obvious over Berger, Jr. (U.S. patent No. 6,062,293) in view of Leist et al. (U.S. patent No. 5,555,923) is in error.

Berger's patent includes a unitary reinforcement piece in the folded area. On the other hand, Berger's patent does not disclose "conforming" longitudinal portions of the reinforcement piece. It was precisely the finding of conforming reinforcement members to the interior of the articulations or joints that is responsible for the unexpected results obtained.

Applicant is not unmindful of the KSR admonition against a rigid application of the TSM (teaching, suggestion motivation) test. *KSR v. Teleflex*, 127 S. Ct. 1727, 1740, 167 L. Ed.2d 705, 82 U.S. P.Q.2d, 1385 (2007). Nonetheless, the test is not inconsistent with the Graham analysis and can be used to provide helpful insights on the issue of obviousness. *Id* at 1731. *Id*. See also, *Takeda Chemical Indus. v. Alphapharm Pty., Ltd., slip op.*, 492 F.3d 1350, 2007 W 1839698 (Fed. Cir. 2007). Thus, the TSM test can be a good starting point to identify "a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does" in an obvious determination. *KSR* at 1731, *Takeda* at 1356-1357.

Berger's patent teaches the use of unitary reinforcement members that Leist fails to disclose. In fact, Leist teaches away from using a unitary member and opts for subpanel channels to improve its transportation logistics. Leist, Col. 1, lines 29-42.<sup>1</sup> Leist needs to connect his connecting bars 32 to each other by providing a reduced portion 38 and an enlarged portion 40. Leist, Col. 5, lines 23-45. It can be seen in Leist's figure 4 that connecting bar 32 is placed away from the articulating joint (fold), let alone conform to the joint. In the present invention the reinforcement member conforms to the shape of the joints selectively providing additional effective reinforcement.

In *Takeda*, the patentee had included fifty-four compounds in the parent application (subsequently patent '200) yet the applicant had not particularly identified the species for the advantages later sought in the continuation patent. *See Takeda* at 1357. Yet, there was no prima facie showing of obviousness. Similarly, for this mechanical invention, the inventor disclosed a unitary interiorly disposed reinforcement member that extends the entire length of the garage door assembly in his patent (the Berger patent). Appellant did not identify the particular and unexpected benefit that resulted when the reinforcement, inside the joint, was made to actually conform to its shape. It was upon subsequent experimentation with the reinforcement member that the inventor herein came across this solution to the industry wide quest to make doors with the least amount of material and yet withstand wind forces. The conforming feature of the reinforcement members effectively and selectively provides the strength solution found by the inventor after his obtaining his patent. There was no reason to compel the inventor, or anyone else, at the time of the invention consider conforming the shape of the reinforcement to the articulated joints of the panels. Leist was concerned about making the door assembly more portable to alleviate transportation problems and Berger was concerned with introducing a unitary reinforcement piece that could be interiorly placed. There are many possible ways of enhancing the structural integrity of garage doors to choose from. Nobody thought about the selective reinforcement claimed here before. The prior art includes a variety of detracting reinforcements, mostly exterior, that adversely affect the aesthetics of the protected door. It was not until the Applicant conformed the shape of its reinforcement member and added the tongue

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<sup>1</sup> There is no showing of "adequate support in the prior art" for the change in the structure. *In re Grabiak*, 769 F.2d 729, 731-32 (Fed. Cir. 1985).

and grooves to those of the joints that the unexpected results were obtained, namely, passing the wind tests without outer aesthetically unattractive reinforcement members.

The test for obviousness is whether or not the references viewed individually and collectively would have suggested the claimed invention to the person possessing ordinary skill in the art. It is to be noted, however, that citing references which merely indicate that isolated elements and/or features recited in the claims are known is not a sufficient basis for concluding that the combination of claimed elements would have been obvious. Furthermore, it is well settled that where the claimed invention solves a problem, the discovery of the source of the problem and its solution are considered to be part of the “invention as a whole” under 35 U.S.C. § 103. *Ex parte Hiyamizu*, 10 USPQ 2d 1393, 1394–95 (B.P.A.I. 1988). Here the Applicant solved the problem disclosed in Page 3, lines 1-24, which is “to provide an interior garage door reinforcement system that is capable of withstanding high winds and flying objects without adversely affecting the aesthetics of the door... enhances its structural integrity by adding reinforcement members that complement and abuttingly conform to the main structural members of the door... made for standard sized panels, to fit standard sized tracks, in standard sized garages, and yet effective to withstand wind loads of hurricane grade and using roll forming manufacturing processes.”

## 9. EVIDENCE APPENDIX

None.

## **10. RELATED PROCEEDINGS APPENDIX**

None.

### ***Closing***

The references do not teach (either individually or in combination) one to build internal garage door reinforcement system where it is most vulnerable, that is capable of withstanding high winds and flying objects of hurricane grade and is manufactured using conventional roll forming processes. Furthermore, they do not teach one to build reinforcement members that come in abutting longitudinal contact with the joints that comprise small longitudinal grooves is equivalent to using thicker, stronger material in selective places such as the vulnerable joints.

The Examiner erred in rejecting claims 1-4. The Applicant respectfully requests reversal of these rejections and allowance of these claims.

Respectfully submitted on  
**January 21, 2009**.

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## **Appendix – Claims on Appeal**

1. In a reinforced garage door in which said garage door has a plurality of panels, having a horizontal width and a vertical height, which panels are monolithic for the entire length of the panels, with adjacent panels above such panels having reversely folded edge portions with complementing joints along the top edge and the bottom edge, such panels having open end members, space vertically and interiorly of the door, and means for securement at the extreme lateral edges to a track for raising and lowering the door, the improvement comprising a plurality of longitudinal unitary reinforcement members insertable horizontally and interiorly of the complementing joints top and bottom longitudinal reversely folded edge portions of the panel from one end thereof to the other uninterrupted and having conforming longitudinal portions for said complementing joints and coming in abutting longitudinal contact with the latter.

2. The reinforced garage door set forth in claim 1 wherein said reinforcement is formed with first, second, third, fourth and fifth folded longitudinal walls, said first and second walls being parallel and spaced apart by said third wall to which the former are perpendicularly mounted, and said fourth and fifth walls being inwardly folded from said first and second walls and said fourth and fifth walls kept next to each other in the same plane, said fourth and fifth wall conforming to the contour of said complementing joints.

3.           The reinforced garage door set forth in claim 2 wherein said complementing joints are of the tongue and groove type and said conforming longitudinal portions are also of the tongue and groove type.

4.           The reinforced garage door set forth in claim 2 wherein said complementing joints are of the shiplap type and said conforming longitudinal portions are also of the shiplap type.